Delaware Health and Social Services
Division of Public Health

Severe Acute Respiratory Syndrome (SARS)

September 24, 2003

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Concerns about a recurrence of SARS

The recent global outbreak of SARS has heightened concern about the occurrence of respiratory diseases having symptoms similar to those seen in SARS. Although the global outbreak of SARS has been contained throughout the summer, considerable uncertainty surrounds the question of whether SARS might recur, perhaps according to a seasonal pattern. Several respiratory illnesses occur much less frequently when temperature and humidity are high and then return when the weather turns cooler in the fall/winter season.

Currently, there is no vaccine or definitive treatment for SARS, other than supportive cares. As the recurrence of SARS during the influenza season cannot be ruled out, Delaware Division of Public Health (DPH) is concerned that cases of influenza and other respiratory diseases, particularly when they occur as clusters in health care facilities, could raise suspicions of SARS. DPH has prepared this document to provide interim recommendations regarding SARS and Influenza clinical descriptions, infection control, laboratory testing/laboratory diagnosis, treatment, prevention and reporting. At your request, we have also included some basic SARS information for distribution to the lay public.

Contents

Attachments

A. Description and Case Definition

Severe Acute Respiratory Syndrome (SARS) is a communicable respiratory illness caused by a coronavirus (SARS-associated coronavirus, or SARS-CoV) that has recently been reported in a number of countries. The main signs/symptoms of SARS include fever >38° C (100.4° F) and cough, shortness of breath, or difficulty breathing. In some affected persons, the illness can be very severe, and can result in death.

In the event of a recurrence of SARS, the previous case definition will change depending specifics of the outbreak. Current CDC case definition(s) will be available at: http://www.cdc.gov/ncidod/sars/casedefinition.htm

The previous (July 18, 2003) **CDC interim U.S. case definition** is the following:

• Cases with convalescent phase serum sample (i.e., collected >28 days after symptom onset) that is negative for antibody to SARS-associated coronavirus (SARS-CoV). Testing results from serum previously collected between 22 and 28 days after symptom onset are acceptable and will not require collection of an additional sample >28 days after symptom onset.

Clinical Criteria

•Asymptomatic or mild respiratory illness

•Moderate respiratory illness
→Temperature of >100.4°F (>38°C), and
→One or more clinical findings of respiratory illness (e.g., cough, shortness of breath, difficulty breathing, or hypoxia).

•Severe respiratory illness
→Temperature of >100.4°F (>38°C), and
→One or more clinical findings of respiratory illness (e.g., cough, shortness of breath, difficulty breathing, or hypoxia), and radiographic evidence of pneumonia, or respiratory distress syndrome, or autopsy findings consistent with pneumonia or respiratory distress syndrome without an identifiable cause

Epidemiologic Criteria

•Travel (including transit in an airport) within 10 days of onset of symptoms to an area with current or suspected community transmission of SARS

•Close contact within 10 days of onset of symptoms with a person known or suspected to have SARS. (Close contact is defined as having cared for or lived with a person known to have SARS or having a high likelihood of direct contact with respiratory secretions and/or body fluids of a patient known to have SARS. Examples of close contact include kissing or embracing, sharing eating or drinking utensils, close conversation (<3 feet), physical examination, and any other direct physical contact between persons. Close contact does not include activities such as walking by a person or sitting across a waiting room or office for a brief period of time.

Laboratory Criteria

•Confirmed
→Detection of antibody to SARS-associated coronavirus (SARS-CoV) in a serum sample, or

→Detection of SARS-CoV RNA by RT-PCR confirmed by a second PCR assay, by using a second aliquot of the specimen and a different set of PCR primers, or
→Isolation of SARS-CoV.

•Negative
→Absence of antibody to SARS-CoV in a convalescent–phase serum sample obtained >28 days after symptom onset.

•Undetermined
→Laboratory testing either not performed or incomplete.

Case Classification

•Probable case: meets the clinical criteria for severe respiratory illness of unknown etiology and epidemiologic criteria for exposure; laboratory criteria confirmed or undetermined.

•Suspect case: meets the clinical criteria for moderate respiratory illness of unknown etiology, and epidemiologic criteria for exposure; laboratory criteria confirmed or undetermined.

Note: Asymptomatic SARS-CoV infection or clinical manifestations other than respiratory illness might be identified as more is learned about SARS-CoV infection.

Exclusion Criteria

A case may be excluded as a suspect or probable SARS case if:

•An alternative diagnosis can fully explain the illness. (Factors that may be considered in assigning alternate diagnoses include the strength of the epidemiologic exposure criteria for SARS, the specificity of the diagnostic test, and the compatibility of the clinical presentation and course of illness for the alternative diagnosis.)

•The case has a convalescent-phase serum sample (i.e., obtained >28 days after symptom onset), which is negative for antibody to SARS-CoV.

•The case was reported on the basis of contact with an index case that was subsequently excluded as a case of SARS, provided other possible epidemiologic exposure criteria are not present.

B. Etiology

The cause of SARS has been determined to be infection with a previously unrecognized human coronavirus, called SARS-associated coronavirus (SARS-CoV). Scientists from CDC and other institutions have published reports in peer-reviewed journals describing the isolation and characterization of SARS-CoV and its association with SARS. Although these reports provide strong evidence that this new coronavirus is the etiologic agent of SARS, it is possible that other pathogens might have a role in some cases of SARS.

C. Transmission

The primary way that SARS appears to spread is by close person-to-person contact. Close contact might occur when people live together in the same household or if someone is providing care to a SARS patient. Examples include kissing or embracing, sharing eating or drinking utensils, close conversation (within 3 feet), physical examination, and any other direct physical contact between people. Close contact does not include activities such as walking by a person or sitting across a waiting room or office for a brief period of time.

Most cases of SARS have involved people who cared for or lived with someone with SARS, or had direct contact with infectious material (for example, respiratory secretions) from a person who has SARS. Respiratory droplet and contact transmission appear to be the predominant modes of transmission. Potential ways in which SARS can be spread include touching the skin of other persons or objects (fomites) that are contaminated with infectious droplets and then touching the eye, nose, or mouth. This can happen when someone who is sick with SARS coughs or sneezes droplets onto themselves, other persons, or nearby surfaces. It is also possible that SARS can be spread more broadly through the air (i.e., airborne transmission) or by other ways that are currently not known. It is not uncommon for respiratory viruses to be found in feces for a period of time. Some laboratories have reported finding the new coronavirus in stool specimens. Research is under way to learn more about the presence and concentration of the virus in different body fluids, including feces. Researchers also are evaluating if the virus can spread to others through different body fluids.

Regarding potential transmission via fomites, contamination of environmental surfaces would be a particular concern in health-care settings and households where patients with SARS would be receiving care. Furniture, clothing, and other items imported from countries where SARS has been found would be expected to pose little, if any, risk of transmission of SARS.

Preliminary studies in some research laboratories suggest that SARS-CoV may survive in the environment for several days. The length of time that the virus survives likely depends on a number of factors. These factors could include the type of material or body fluid containing the virus and various environmental conditions such as temperature or humidity. Additional studies are under way to obtain further understanding of this important issue. (Note that the current data on survival of SARS Co-V outside of the human body emphasize the importance of frequent handwashing with soap and water or use of alcohol-based hand rubs if hands are not visibly dirty.)

Currently, CDC does not have epidemiologic evidence for high risk of transmission of SARS Co-V infection from persons who are without fever or respiratory symptoms. However, according to recent reports health-care workers who developed SARS may have been a source of transmission within healthcare facilities during the early phases of illness when symptoms were mild and not recognized as SARS.

D. Incubation Period

The incubation period for SARS is typically 2-7 days; however, isolated reports have suggested an incubation period as long as 10 days.

E. Clinical Description of SARS

The majority of patients identified as having SARS have been adults aged 25-70 years who were previously healthy. Few suspected cases of SARS have been reported among children aged <15 years.

(No instances of SARS-CoV infection have been detected in persons who are asymptomatic. However, data are insufficient to exclude the possibility of asymptomatic infection with SARS-CoV and the possibility that such persons can transmit the virus.)

The incubation period for SARS is typically 2-7 days; however, isolated reports have suggested an incubation period as long as 10 days. The illness begins generally with a prodrome of fever (>100.4°F [>38.0°C]). Fever often is high, sometimes is associated with chills and rigors, and might be accompanied by other symptoms, including headache, malaise, and myalgia. At the onset of illness, some persons have mild respiratory symptoms. Typically, rash and neurologic or gastrointestinal findings are absent; however, some patients have reported diarrhea during the febrile prodrome. (CDC has noted that the clinical manifestations of SARS might extend beyond respiratory illness.)

After 3-7 days, a lower respiratory phase begins with the onset of a dry, nonproductive cough or dyspnea, which might be accompanied by or progress to hypoxemia. In 10%-20% of cases, the respiratory illness is severe enough to require intubation and mechanical ventilation.

Chest radiographs might be normal during the febrile prodrome and throughout the course of illness. However, in a substantial proportion of patients, the respiratory phase is characterized by early focal interstitial infiltrates progressing to more generalized, patchy, interstitial infiltrates. Some chest radiographs from patients in the late stages of SARS also have shown areas of consolidation.

Early in the course of disease, the absolute lymphocyte count is often decreased. Overall white blood cell counts have generally been normal or decreased. At the peak of the respiratory illness, approximately 50% of patients have leukopenia and thrombocytopenia or low-normal platelet counts (50,000- 150,000/µL). Early in the respiratory phase, elevated creatine phosphokinase levels (as high as 3,000IU/L) and hepatic transaminases (two to six times the upper limits of normal) have been noted. In the majority of patients, renal function has remained normal.

Treatment regimens have included several antibiotics to presumptively treat known bacterial agents of atypical pneumonia. In several locations, therapy also has included antiviral agents such as oseltamivir or ribavirin. Steroids have also been administered orally or intravenously to patients in combination with ribavirin and other antimicrobials.

F. SARS and Influenza

Influenza is one of several diseases causing fever and respiratory symptoms that might raise suspicions of SARS. However, influenza is of particular concern because of the potential for institutional and community outbreaks and regional epidemics. Influenza typically infects 10% to 20% of the total population during seasonal epidemics, resulting in from three to five million cases of severe illness and at least 250,000 to 500,000 deaths each year worldwide.

Most cases of severe illness and deaths associated with influenza occur in certain groups at high risk for developing secondary complications, including pneumonia. Such groups include the elderly, the immunocompromised, and persons with underlying chronic cardiopulmonary, renal, or metabolic disease.

A safe and effective vaccine against influenza is available and is recommended annually for persons in these high-risk groups. Annual administration of influenza vaccine is the most effective means for preventing influenza. In addition, influenza vaccination in high-risk groups and health workers caring for them will reduce the number of pneumonia cases which could be confused with SARS.

However, Centers for Disease Control and Prevention (CDC) does not recommend that influenza vaccination be considered as a way to avoid confusing influenza disease with an influenza-like illness (ILI) caused by SARS.

It is useful to be able to compare and contrast the viruses and clinical effects of SARS and influenza side-by side:

SARS	Influenza
•Coronavirus (+) RNA •Transmitted by large droplets spread by coughs and sneezing or by direct person-to-person contact with bodily secretions •The virus can survive on fomites for at least 24 hours up to several days.	•Orthomyxovirus (-) RNA •Transmitted by aerosols where the virus particles are widely distributed in the air and inhaled by people in proximity who happen to breathe in the infectious particles
•Contagious up to 10 days (quarantine period)	•Contagious 3 -4 days
•Chest radiograph indicative of pneumonia; may also cause severe diarrhea •Fever (38°C), chills, headache and myalgias •Dry cough, dyspnea •Patients given supportive care; mechanical ventilation as indicated •No vaccine or definitive treatment; possible antiviral use	•Respiratory infection affecting nasal passages, but may quickly escalate to bronchitis, secondary infections and pneumonia •Fever, chills, headaches, myalgias, sore throat, nasal congestion, fatigue, anorexia •Vaccine available; antivirals available which may decrease length and severity of illness

G. Diagnostic Testing / Specimen Collection for Potential Cases of SARS

If a patient is suspected to have SARS, immediately notify the DPH Epidemiology Branch at 1-888-295-5156 (24 hours a day/7 days a week). The Epidemiology Branch will work with the physician and/or hospital to determine whether testing is warranted. If testing is required, directions for specimen collection and specimen transport will be discussed. See Attachment A1-Requisition of Viral Disease Diagnostic Service, and A2-Guidelines for Collections of Specimens from Potential SARS Cases.

Initial diagnostic testing for suspected SARS patients should include chest radiograph, pulse oximetry, blood cultures, sputum Gram's stain and culture, and testing for viral respiratory pathogens, notably influenza A and B and respiratory syncytial virus (RSV). A specimen for Legionella and pneumococcal urinary antigen testing should also be considered. Clinicians should save any available clinical specimens (respiratory, blood, and serum) for additional testing until a specific diagnosis is made. *Acute and convalescent (>28 days after onset of symptoms) serum samples should be collected from each patient who meets the SARS case definition.* Paired sera can be forwarded through MSPHL for testing at CDC.

H. Treatment

CDC has stated that, because the etiology of SARS has not yet been determined, no specific treatment recommendations can be made at this time. Empiric therapy should include coverage for organisms associated with any community-acquired pneumonia of unclear etiology, including agents with activity against both typical and atypical respiratory pathogens. Treatment choices may be influenced by the severity of the illness. Infectious disease consultation is recommended. DPH, Epidemiology Branch should be contacted for consultation with CDC (1-888-295-5156).

As stated above, treatment regimens that have been utilized to date have included several antibiotics to presumptively treat known bacterial agents of atypical pneumonia. In several locations, therapy also has included antiviral agents such as oseltamivir or ribavirin. Steroids have also been administered orally or intravenously to patients in combination with ribavirin and other antimicrobials. CDC emphasizes that, at present, the most efficacious treatment regimen, if any, is unknown.

I. Infection Control Recommendations for Health Care and Community Settings
CDC has issued revised interim guidance concerning SARS infection control precautions in the health-care and community setting. Health-care personnel should apply these precautions for any contact with patients with suspected SARS. Note that the case definition for suspected SARS will change, particularly concerning travel history, as recurrence of transmission is reported.

For all contact with suspect SARS patients, careful hand hygiene is urged, including hand washing with soap and water; if hands are not visibly soiled, alcohol-based hand rubs may be used as an alternative to handwashing.

1. Inpatient settings
If a suspect SARS patient is admitted to the hospital, infection control personnel should be notified immediately. Infection control measures for inpatients should include:

- Standard precautions (e.g., hand hygiene); in addition to routine standard precautions, health-care personnel should wear eye protection for all patient contact.
- Contact precautions (e.g., use of gown and gloves for contact with the patient or their environment)
- Airborne precautions (e.g., an isolation room with negative pressure relative to the surrounding area and use of an N-95 filtering disposable respirator for persons entering the room)

If airborne precautions cannot be fully implemented, patients should be placed in a private room, and all persons entering the room should wear N-95 respirators. Where possible, a qualitative fit test should be conducted for N-95 respirators. If N-95 respirators are not available for health-care personnel, then surgical masks should be worn. Regardless of the availability of facilities for airborne precautions, standard and contact precautions should be implemented for all suspected SARS patients.

2. Outpatient settings
Persons seeking medical care for an acute respiratory infection should be asked about possible exposure to someone with SARS or recent travel to an area with SARS. If SARS is suspected, provide and place a surgical mask over the patient's nose and mouth. If masking the patient is not feasible, the patient should be asked to cover his/her mouth with a disposable tissue when coughing, talking or sneezing. Separate the patient from others in the reception area as soon as possible, preferably in a private room with negative pressure relative to the surrounding area.

All health-care personnel should wear N-95 respirators while taking care of patients with suspected SARS. In addition, health care personnel should follow standard precautions (e.g., hand hygiene), contact precautions (e.g., use of gown and gloves for contact with the patient or their environment) and wear eye protection for all patient contact.

J. Triage and disposition
To facilitate identification of patients who may have SARS in ambulatory care settings, targeted screening questions concerning fever, respiratory symptoms, close contact with a SARS suspect case patient, and recent travel should be included when patients call for appointments and at triage or as soon as possible after patient arrival. The most recent case definition for SARS should be used as the basis for questions regarding travel history. Contact DPH at 1-888-295-5156 for clarification with case definition.

Health-care personnel who are the first points of contact should be trained to perform SARS screening. In the absence of a systematic screening or triage system, providers taking care of patients in ambulatory care settings should perform such screening before performing other history taking or examinations.

Because patients with developing SARS may present with either only fever or only respiratory symptoms, infection control precautions should be instituted immediately for patients who have either fever or respiratory symptoms and have had close contact with SARS or who have a history of international travel to an area identified by the case definition. A surgical mask should be placed on such patients early during the triage process.

Decisions concerning inpatient hospital admission or discharge of a patient with suspected or developing SARS should generally be based on the patient's health-care needs (e.g., diagnostic, therapeutic, or supportive regimens that necessitate hospitalization).

•Patients should not be hospitalized solely for the purpose of infection control unless they cannot be discharged directly to their home (e.g. travelers, homeless persons) or if infection precautions recommended for the home or residential setting are not feasible in their home environment (e.g. crowded dormitory setting, prisons, jails, detention centers, homeless shelters, or other multi-person single room dwellings).

K. Cleaning and Disinfection of the SARS Patient Environment

Cleaning and disinfection of environmental surfaces are important components of routine infection control in healthcare facilities. Although environmental surfaces (e.g., floors, table tops) are generally not involved in transmission of microorganisms, some surfaces, especially those that are touched frequently (e.g., bed rails, door knobs, lavatory surfaces) may serve as important reservoirs of microbial contamination. When these surfaces are touched, the microbial agents can be transferred to nose, mouth, eyes, or other environmental surfaces. The performance of hand hygiene and adhering to a regular schedule of cleaning and disinfection will help reduce the microbial burden in the patient's environment. This may be an important adjunct measure for controlling the spread of SARS in healthcare settings. Personnel who are assigned this responsibility should be trained and supervised in cleaning and disinfection methods. In areas with a high volume of SARS patients, consideration may be given to designating specific personnel for this task.

The approach to environmental cleaning and disinfection for SARS will follow the same principles used for controlling the spread of other infections in healthcare settings.

Personal Protective Equipment

Personnel involved in cleaning and disinfection activities should wear appropriate personal protective equipment. Wear full protective attire as required for contact and airborne precautions (disposable gown, utility gloves, and N95 respirator) plus eye protection (goggles or face shield) as long as the patient is in the room. Once the patient has been transferred or discharged, wear gown and gloves for post-discharge cleaning.

Postpone initiation of cleaning to allow time for the ventilation system to remove any residual airborne viral particles. In most general patient care areas in U.S. healthcare facilities, the heating, ventilation and air-conditioning (HVAC) systems are generally engineered to provide approximately 6 air changes per hour (ACH).

Type of Cleaning and Disinfectant Agents

Any EPA-registered* hospital detergent-disinfectant currently used by healthcare facilities for environmental sanitation may be used. Manufacturer' recommendations for use-dilution (i.e., concentration), contact time and care in handling should be followed. (*There are no disinfectant products currently registered by the U.S. Environmental Protection Agency (EPA) specifically for the inactivation of the newly identified viruses associated with SARS.)

Cleaning methods

In-patient rooms housing SARS patients should be cleaned and disinfected daily and at the time of patient transfer or discharge.

•Daily cleaning and disinfection should include horizontal surfaces (e.g., over-bed table, nightstand) surfaces that are frequently touched by patients and healthcare personnel (e.g., bed rails, phone) and lavatory facilities. To facilitate daily cleaning, the area around the patient should be kept free of unnecessary equipment and supplies.

•Terminal cleaning and disinfection following transfer or discharge should include the type of surfaces described above plus obviously soiled vertical surfaces, frequently touched surfaces (e.g., light cords and switches, door knobs), and durable patient equipment (e.g., bed, night stand, over-bed table, wheelchair, commode). Curtain dividers also should be changed and laundered as appropriate for the curtain fabric. There is no need to routinely clean and disinfect walls, window drapes, and other vertical surfaces unless visibly soiled; disinfectant fogging for purposes of air disinfection is not recommended.

•Patient care equipment such as mechanical ventilators, pulse oximeters, blood pressure cuff, should be cleaned and disinfected in accordance with current CDC recommendations, manufacturer's instructions and facility procedures for critical, semi-critical and non-critical surfaces.

•Cubicles or rooms in outpatient areas where patients with suspected SARS are evaluated should be cleaned and disinfected before another patient is seen or cared for in that environment. Areas that should be specifically targeted for cleaning include the examination table and horizontal surfaces that may have been touched by the patient or healthcare provider.

•Solutions used for cleaning and disinfection should be discarded after use. Thoroughly rinse and clean housekeeping equipment after use in a SARS room or area and allow the equipment to dry. Launder reusable mop heads and cleaning cloths according to current practice.

L. Management of exposures to SARS for healthcare settings

Worldwide, several health-care workers have been reported to develop SARS after caring for patients with SARS. Transmission to health-care workers appears to have occurred after close contact with symptomatic individuals (e.g., persons with fever or respiratory symptoms) before recommended infection control precautions for SARS were implemented (i.e., unprotected exposures). Personal protective equipment appropriate for standard, contact, and airborne precautions (e.g., hand hygiene, gown, gloves, and N95 respirator) in addition to eye protection, have been recommended for health-care workers to prevent transmission of SARS in health-care settings.

Given the currently available information on the epidemiology of SARS, the following outlines interim guidance for the management of exposures to SARS in a health-care facility.

Surveillance of Health-Care Personnel

Surveillance of health-care personnel is necessary to ensure that workers who are ill receive appropriate care and are isolated to prevent transmission. Health-care facilities that care for SARS patients should implement surveillance of health-care workers who have any contact with SARS patients or their environment of care. Recommendations for surveillance include:

•Develop and maintain a listing of all personnel who enter the rooms of SARS patients, or who are involved in the patient's care in other parts of the hospital.

•Instruct personnel who have contact with SARS patients or their environment of care to notify occupational health, infection control or their designee if they have unprotected exposure to a SARS patient or if they develop any fever or respiratory symptoms.

•Monitor employee absenteeism for increases that may suggest emerging respiratory illness in the workforce. Notify local and state health authorities of clusters or unusual increases in respiratory illness, including atypical pneumonia.

Management of Asymptomatic, Exposed Health-Care Workers

•To date, there is no evidence to suggest that SARS is transmitted from asymptomatic individuals. However, according to recent reports health-care workers who developed SARS may have been a source of transmission within health-care facilities during the early phases of illness when symptoms were mild and not recognized as SARS. To minimize the risk of transmission from unrecognized SARS infections among health-care workers, health-care workers who have *unprotected high-risk exposures* to SARS should be excluded from duty (e.g. administrative leave) for 10 days following the exposure. Unprotected high-risk exposure is defined as presence in the same room as a probable SARS patient during a high-risk aerosol-generating procedure or event and where recommended infection control precautions are either absent or breached. Aerosol-generating procedures or events include aerosolized medication treatments, diagnostic sputum induction, bronchoscopy, endotracheal intubation, airway suctioning, positive pressure ventilation via facemask (e.g.,BiPAP,CPAP), during which air may be forced out around the facemask, and high frequency oscillatory ventilation (HFOV). Health-care workers who are excluded from duty because of their exposure need not limit their activities outside of the healthcare setting, but should undergo active surveillance for symptoms, including measurement of body temperature twice daily and monitoring for respiratory symptoms for 10 days following exposure.

•Health-care workers who have other unprotected exposures to patients with SARS need not be excluded from duty because of their exposure and need not limit their activities outside of the healthcare setting, but should undergo active surveillance for symptoms, including measurement of body temperature twice daily and monitoring for respiratory symptoms for 10 days following exposure.

•Health-care workers who have cared for or otherwise been exposed to SARS patients while adhering to recommended infection control precautions should be instructed to be vigilant for fever and respiratory symptoms, including measurement of body temperature at least twice daily for 10 days following the last exposure to a SARS patient. These health-care workers should be contacted by occupational health, infection control or their designee regularly over the 10-day period following exposure to inquire about fever or respiratory symptoms.

Management of Symptomatic, Exposed Health-Care Workers

•Any health-care worker who has cared for or been exposed to a SAR patient who develops fever OR respiratory symptoms within 10 days following exposure should not report for duty, but should stay home and report symptoms to the appropriate facility point of contact immediately. If the symptoms begin while at work, the health-care worker should be instructed to immediately apply a surgical mask and leave the patient care area. Symptomatic health-care workers should use infection control precautions to minimize the potential for transmission and should seek health-care evaluation. **In advance of clinical evaluation health-care providers should be informed that the individual may have been exposed to SARS so arrangements can be made, as necessary, to prevent transmission to others in the health-care setting.**

•If symptoms improve or resolve within 72 hours after first symptom onset, the person may be allowed, after consultation with infection control and DPH, to return to duty and infection control precautions can be discontinued.

•For persons who meet or progress to meet the case definition for SARS (e.g., develop fever and respiratory symptoms), infection control precautions should be continued until 10 days after the resolution of fever, provided respiratory symptoms are absent or improving.

•If the illness does not progress to meet the case definition, but the individual has persistent fever or unresolving respiratory symptoms, infection control precautions should be continued for an additional 72 hours, at the end of which time a clinical evaluation should be performed. If the illness progresses to meet the case definition, infection control precautions should be continued as described above. If case definition criteria are not met, infection control precautions can be discontinued after consultation with DPH and the evaluating clinician. Factors that might be considered include the nature of the potential exposure to SARS, nature of contact with others in the residential or work setting, and evidence for an alternative diagnosis.

•Persons who meet or progress to meet the case definition for suspected SARS (e.g., develop fever and respiratory symptoms) or whose illness does not meet the case definition, but who have persistent fever or unresolving respiratory symptoms over the 72 hours following onset of symptoms should be tested for SARS coronavirus infection. Collection of appropriate specimens
for laboratory testing should be coordinated with and guided by DPH.

Prevention of Unprotected Exposures
Prevention of unprotected exposures will limit the need for exclusion from duty. Health-care facilities should address the following:

•Review current procedures for early detection and isolation of suspect SARS patients
•Educate all health-care personnel on signs and symptoms of SARS and recommended infection control practices
•Review use of personal protective equipment with health-care personnel, including physicians, who may care for SARS patients
•Follow current CDC recommendation for aerosol-generating procedures in suspected or probable SARS patients

Management of Symptomatic, Exposed Visitors
Close contacts (e.g., family members) of SARS patients are at risk for infection. Close contacts with either fever or respiratory symptoms should not be allowed to enter the health-care facility as visitors and should be educated about this policy. A system for screening SARS close contacts who are visitors to the facility for fever or respiratory symptoms should be in place. Health-care facilities should educate all visitors about use of infection control precautions when visiting SARS patients and their responsibility for adherence to them.

M. Use of Respirators
The transmission of SARS appears to occur predominantly by direct contact with infectious material, including dispersal of large respiratory droplets. However, it is also possible that SARS can be spread through the airborne route. Accordingly, CDC has recommended the use of N95 respirators, consistent with respiratory protection for airborne diseases, such as tuberculosis.

SARS, unlike tuberculosis, also appears to spread by direct contact with respiratory secretions, which makes touching contaminated objects a potential concern. Although reaerosolization of infectious material is unlikely under normal use conditions, infectious material deposited on a respirator may cause it to become a vehicle for direct or indirect transmission. Therefore, additional infection control measures applicable to this specific situation are needed.

This interim guidance provides information on the selection and handling of respirators for SARS and includes guidance for when respirators are either not available or in short supply.

1. A NIOSH-certified, disposable N95 respirator is sufficient for routine airborne isolation precautions. Use of a higher level of respiratory protection may be considered for certain aerosol-generating procedures.

a. Respirators should be used in the context of a complete respiratory protection program in accordance with OSHA regulations. This includes training and fit testing to ensure a proper seal between the respirator's sealing surface and the wearer's face.

b. Once worn in the presence of a SARS patient, the respirator should be considered potentially contaminated with infectious material, and touching the outside of the device should be avoided. Upon leaving the patient's room, the disposable respirator should be removed and discarded, followed by hand hygiene.

2. If a sufficient supply of respirators is not available, healthcare facilities may consider reuse as long as the device has not been obviously soiled or damaged (e.g., creased or torn). Data on reuse of respirators for SARS are not available. Reuse may increase the potential for contamination; however, this risk must be balanced against the need to fully provide respiratory protection for healthcare personnel. If N95 respirators are reused for contact with SARS patients, implement a procedure for safer reuse to prevent contamination through contact with infectious droplets on the outside of the respirator.

a. Consider wearing a loose-fitting barrier that does not interfere with fit or seal (e.g., surgical mask, face shield) over the respirator.

b. Remove the barrier upon leaving the patient's room and perform hand hygiene. Surgical masks should be discarded; face shields should be cleaned and disinfected.

c. Remove the respirator and either hang it in a designated area or place it in a bag. (Consider labeling respirators with a user's name before use to prevent reuse by another individual.)

d. Use care when placing a used respirator on the face to ensure proper fit for respiratory protection and to avoid contact with infectious material that may be present on the outside of the mask.

e. Perform hand hygiene after replacing the respirator on the face.

3. When elastomeric (rubber) or powered air purifying respirators (PAPRs) are used, their reusable elements should be cleaned and disinfected after use, in accordance with manufacturer's recommendations. When half- or full-facepiece elastomeric negative pressure respirators are used by more than one individual, filters should be replaced between individual users. When PAPRs are used, the filters should be replaced following manufacturer's recommendations. All used filters must be safely discarded.

4. Respiratory protective devices with a filter efficiency of 95% or greater (e.g., N95, N99, N100) may not be available in some settings due to supply shortages or other factors. In this situation, a surgical mask should be worn. Surgical masks will provide barrier protection against large droplets that are considered to be the primary route of SARS transmission. However, surgical masks may not adequately protect against aerosol or airborne particles, primarily because they allow for leakage around the mask and cannot be fit tested. The mask should resist fluid penetration and fit tightly around the mouth and nose when properly applied to the face.

5. Hand hygiene is urged for all contact with suspect SARS patients or objects that may be contaminated with the virus that causes SARS, including hand washing with soap and water; if hands are not visibly soiled, alcohol-based hand rubs may be used as an alternative to hand washing.

N. Aerosol-generating procedures

Worldwide, several health-care workers (HCWs) have been reported to develop SARS after caring for patients with SARS. Multiple hospitals have reported cases among HCWs who were present during aerosol-generating procedures performed on patients with SARS, suggesting that aerosol-generating procedures may increase the risk of SARS transmission.

Procedures capable of stimulating cough and promoting the generation of aerosols include: administration of aerosolized medication treatment; diagnostic sputum induction; bronchoscopy; airway suctioning; endotracheal intubation; positive pressure ventilation via facemask (e.g., BiPAP, CPAP), during which air may be forced out around the facemask; and high frequency oscillatory ventilation (HFOV). CDC is recommending healthcare facilities to review their strategies to protect HCWs during these procedures, including the use of personal protective equipment and safe work practices, and to alert HCWs performing such procedures that there may be an increased risk for transmission of SARS.

The following recommendations apply to the performance of aerosol-generating procedures in patients with suspect or probable SARS. These recommendations should be considered interim in nature, and may be revised as more information becomes available.

Limit opportunities for exposure

- Limit the use of aerosol-generating procedures on SARS patients to those that are deemed medically necessary. Use clinically appropriate sedation during intubation and bronchoscopy to minimize resistance and coughing during the procedure.

- Limit the number of HCWs present in the room during an aerosol-generating procedure to those who are essential for patient care and support.

Perform aerosol-generating procedures in an airborne isolation environment

- If the patient is in an airborne isolation room, perform the procedure in that environment.

- If an airborne isolation room is not available, the procedure should be performed in a private room, away from other patients. If possible, steps should be taken to increase air exchanges, create a negative pressure relative to the adjacent room or hallway, and avoid recirculation of the room air. If recirculation of air from such rooms is unavoidable, the air should be passed through a HEPA filter before recirculation as recommended for *Mycobacterium tuberculosis.* Air cleaning devices such as portable HEPA filtration units may be used to further reduce the concentration of contaminants in the air. Doors should be kept closed except when entering or leaving the room, and entry and exit should be minimized during the procedure.

Use of filters on ventilation exhaust valves

- Some hospitals caring for SARS patients have used bacterial/viral filters on exhalation valves of mechanical ventilators to prevent contaminated aerosols from entering the

environment. Although the effectiveness of this measure in reducing the risk of SARS transmission is unknown, the use of such filters may be prudent during HFOV of patients with SARS.

Wear personal protective equipment appropriate for standard, contact and airborne precautions with consideration for additional personal protection based on the potential for higher level of contact with respiratory secretions

The optimal combination of personal protective equipment (PPE) for preventing transmission of SARS during aerosol-generating procedures has not been determined. PPE must cover the arms and torso, and fully protect the eyes, nose and mouth; additional PPE to protect all exposed areas of skin should be considered.

The following PPE is recommended for those present during aerosol-generating procedures on patients with SARS:

- Single isolation gown to protect the body and exposed areas of the arms. A disposable full-body isolation suit may be considered in this setting as it provides greater protection for the neck area; some suits also have an attached hood to cover the hair. Another alternative for providing full head, neck, face and respiratory protection is a disposable surgical hood with an attached face shield in combination with a disposable respirator. It is unknown whether covering exposed areas of skin or hair of the head and neck will further reduce the risk of transmission.

- A single pair of disposable gloves that provide a snug fit over the wrist.

- Eye protection consisting of goggles should be worn to protect the eyes from respiratory splash or spray.

- A face shield may be worn over goggles to protect exposed areas of the face but should not be used as a primary form of eye protection for these procedures.

- Respiratory protection for aerosol-generating procedures must ensure that HCWs are protected from exposure to aerosolized infectious droplets through breaches in respirator seal integrity.

O. Handling / processing laboratory specimens

It is estimated that several thousand diagnostic specimens from patients with SARS have been processed in routine clinical laboratories throughout the world and to date there have been no reported clusters of SARS illness among laboratory workers. Nonetheless, until more information about the transmission of the SARS agent in the laboratory setting is known, reasonable precautions should be taken in handling these specimens. Effective and timely communication between clinical and laboratory staff is essential in minimizing the risk incurred in handling specimens from patients in whom SARS is suspected. Specimens from patients with suspected SARS should be labeled accordingly and the laboratory should be alerted to insure proper specimen handling. Listed below are interim biosafety guidelines from CDC for handling these specimens.

Blood and Urine Specimens

These specimens may be handled using Standard Precautions in BSL-2 laboratories. Laboratory workers should wear protective equipment, including disposable gloves, laboratory coats, eye protection and a surgical mask, or face shield to provide a barrier to mucosal surface exposure. Careful attention should be given to hand hygiene after removal of gloves and especially before touching the eyes or mucosal surfaces.

Any procedure with the potential to generate fine particulate aerosols (e.g. vortexing or sonication of specimens in an open tube) should be performed in a biological safety cabinet (BSC). The use of sealed centrifuge rotors or sample cups, if available, should be employed for centrifugation. Ideally, these rotors or cups should be unloaded in a BSC.

Procedures performed outside of a BSC should be performed in a manner that minimizes the risk of exposure to an inadvertent sample release.

Work surfaces and equipment should be decontaminated after specimens are processed. Standard decontamination agents that are effective against lipid-enveloped viruses should be sufficient.

If the safety equipment described above is not available, administrative measures and/or additional personal protective equipment may be employed to reduce risk. This should be done in the context of a careful risk assessment by the laboratory safety officer.

Consideration may be given to implementing respiratory protection for workers for use during centrifugation or other procedures with increased potential for inadvertent sample release. Acceptable methods of respiratory protection include a properly fit tested NIOSH approved filter respirator (N-95 or higher); or powered air-purifying respirators (PAPRs) equipped with high efficiency particulate air (HEPA) filters. Accurate fit testing is a key component of effective respirator use. Personnel who cannot wear fitted respirators because of facial hair or other fit-limitations should wear loose fitting hooded or helmeted PAPRs.

Consideration may also be given to referral of specimens to a suitably equipped reference laboratory.

Other Specimens

The following activities may be performed in BSL-2 facilities with standard BSL-2 work practices:

a. Pathologic examination and processing of formalin-fixed or otherwise inactivated tissues.

b. Molecular analysis of extracted nucleic acid preparations.

c. Electron microscopic studies with glutaraldehyde-fixed grids.

d. Routine examination of bacterial and mycotic cultures.

e. Routine staining and microscopic analysis of fixed smears.

f. Final packaging of specimens for transport to diagnostic laboratories for additional testing. Specimens should already be in a sealed, decontaminated primary container.

Activities involving manipulation of untreated specimens may be performed in BSL-2 facilities, but with more stringent BSL-3 work practices. Laboratory workers should wear protective equipment, including disposable gloves, solid front gowns with cuffed sleeves, and full-face protection. Specimen manipulations should be carried out in a certified biological safety cabinet. When a procedure or process cannot be conducted within a biological safety cabinet, then appropriate combinations of personal protective equipment (e.g., respirators, face shields) and physical containment devices (e.g., centrifuge safety cups or sealed rotors) must be used. Acceptable methods of respiratory protection include a properly fit tested NIOSH approved filter respirator (N-95 or higher); or powered air-purifying respirators (PAPRs) equipped with high efficiency particulate air (HEPA) filters. Accurate fit testing is a key component of effective respirator use. Personnel who cannot wear fitted respirators because of facial hair or other fit-limitations should wear loose fitting hooded or helmeted PAPRs. Centrifugation should be carried out using sealed centrifuge cups or rotors that are unloaded in a biological safety cabinet.

Examples of these activities include:

a. Aliquoting and/or diluting specimens
b. Inoculation of bacterial or mycological culture media.
c. Performing diagnostic tests that don't involve propagation of viral agents in vitro or in vivo.
d. Nucleic acid extraction procedures involving untreated specimens
e. Preparation and chemical- or heat-fixing of smears for microscopic analysis.

The following activities require BSL-3 facilities and BSL-3 work practices. When a procedure or process cannot be conducted within a biological safety cabinet, then appropriate combinations of PPE (e.g., respirators, face shields) and physical containment devices (e.g., centrifuge safety cups or sealed rotors) *must* be used.

a. Viral cell culture
b. Initial characterization of viral agents recovered in cultures of SARS specimens.

Refer to (Section G. Diagnostic Testing and Specimen Collection) for such guidelines.

P. Reporting

Suspected SARS cases should be reported immediately to the Delaware Division of Public Health, Epidemiology Branch at 1-888-295-5156. An epidemiologist is on call 24 hours a day/7 days a week.

Q. Further Information

More detailed information can be found on the CDC SARS website:
http://www.cdc.gov/ncidod/sars/. Check this site for updates and revised recommendations as well.

SARS topics currently available on the CDC website include:

Information for Specific Groups and Settings:

- What Everyone Should Know (Basic Information and FAQ's)
- Patients and Close Contacts
- Clinicians
- Workplace

- Schools, Colleges, etc.
- Travelers
- Americans Living Abroad

Specific Topics:

- Diagnosis / Evaluation
- Laboratory / Specimens
- Treatment
- Patient Transport
- Infection Control
- Quarantine
- Travel
- Reporting
- Training Materials

DELAWARE PUBLIC HEALTH LABORATORY
REQUISITION OF VIRAL DISEASE DIAGNOSTIC SERVICE
30 SUNNYSIDE ROAD, SMYRNA, DE 19977

Specimen submitted by:
Hospital/ Clinic _____

Physician _____

Address _____

_____

Telephone No. _____

LABORATORY EXAMINATION REQUEST

☐ ISOLATION AND IDENTIFICATION

☐ Throat/Pharynx	☐ Skin
☐ Sputum	☐ Urine
☐ Feces	☐ Eye
☐ CSF	☐ Genital
☐ Blood	☐ Slide
	☐ Other_____
	Specify

Date Collected _____ Onset Date _____

☐ SEROLOGY

Date Collected ☐S1 ☐S2 ☐S3

_____

LABORATORY OBSERVATIONS & RESULTS

ANTIGEN	**T**ECHNIQUE	**S1**	**S2**	**S3**

_____ ð Isolated ð Not Isolated by Cell Culture
_____ ð Isolated ð Not Isolated by Cell Culture

_____ ð Detected ð Not Detected by PCR
_____ ð Detected ð Not Detected by PCR

Lab. No._____**Date Rec'd**_____
Patient Name _____
Sex [ ] M [ ] F Birthdate_____
Address_____
Clinical Diagnosis_____

Ins.# _____ Name _____

SYMPTOMS
☐ **Fe**ver
Max Temperature____
Duration _____**D**ays
☐ **CH**ills

RASH
☐ **MA**culopapular
☐ **HE**morrhagic
☐ **VE**sicular
☐ **ER**ythema Nodosum
☐ **ER**ythema Marginatum
☐ **O**ther _____

RESPIRATORY
☐ **RH**initis
☐ **PU**lmonary
☐ **P**haryngitis
☐ **CA**lcifications
☐ **PN**eumonia (Type)
☐ **O**ther _____

CARDIOVASCULAR
☐ **MY**ocarditis
☐ **P**ericarditis
☐ **EN**docarditis
☐ **O**ther _____

GASTROINTESTINAL
☐ **DI**arrhea
☐ **BL**ood
☐ **MU**cous
☐ **CO**nstipation
☐ **AB**dominal Pain
☐ **V**omiting
☐ **O**ther_____

IMMUNIZATION Dates
☐ **P**olio
☐ **R**ubella
☐ **M**umps
☐ **M**easles
☐ **Influenza**
☐ **O**ther _____

CENTRAL NERVOUS SYSTEM
☐ **HE**adache
☐ **Me**ningitis
☐ **Mi**crocephalus
☐ **Hy**drocephalus
☐ **Se**izures
☐ **C**erebral **C**alcification
☐ **C**horea
☐ **Pa**ralysis
☐ **O**ther _____

MISCELLANEOUS
☐ **Ja**undice
☐ **My**algia
☐ **Pl**eurodynia
☐ **Co**njunctivitis
☐ **Ch**orioretintis
☐ **Sp**lenomegaly
☐ **H**epatomegaly
☐ **L**iver **A**bscess
☐ **L**ymphadenopathy
☐ **Mu**cous **M**embrane **L**esions
☐ **O**ther _____

STATE OF ILLNESS
☐ **SY**mptomatic
☐ **AS**ymptomatic
☐ **SU**bacute
☐ **CH**ronic
☐ **LO**calized
☐ **IN**traintestinal
☐ **EX**traintestinal
☐ **O**ther_____

EPIDEMIOLOGIC DATA
☐ **S**ingle **C**ase
☐ **F**amily **Ill**
☐ **C**ommunity **Ill**
☐ **F**oreign **E**xpo
☐ **A**nimal **E**xpo
☐ **A**rthropod **E**xpo

TREATMENT ☐ **N**one **D**rug **U**sed _____
Date **B**egun_____ **E**nded_____

_____

Technician _____

Virologist _____

Date Reported _____

Attachment A2: DPH Guidelines for Collection of Specimens for Potential SARS cases

Please contact the Delaware Division of Public Health, Epidemiology Branch (1-888-295-5156) for consultation before collecting and shipping specimens for SARS testing. **Samples from patients who do not meet the SARS case definition will NOT be tested.** An epidemiologist is available 24 hours per day, seven days per week to respond to inquiries.

For submission of specimens for SARS testing, health care providers should follow these steps:

1. Obtain informed consent forms from the Epidemiology Branch. Have the patient sign the consent form(s) for testing and specimen storage.

2. At minimum, the following specimens should be collected: whole blood (EDTA purple-top tube), acute/convalescent serum, nasopharyngeal/oropharyngeal aspirate or swab, and stool. Collect acute serum specimens as soon as possible after onset. Collect convalescent specimens no sooner than 28 days after the onset of fever. Depending on the clinical scenario, other types of samples may be requested.

3. For serological testing by Enzyme Immunoassay: Collect 5-10 ml of whole blood in a serum separator tube. A minimum of 1cc of whole blood is needed for testing pediatric patients. Allow blood to clot, centrifuge briefly and collect all resulting sera in vials with external caps and internal O-ring seals. If there are no internal O-ring seals, then cap securely and seal with parafilm. A minimum of 200 microliters of serum is preferred for each test, which can easily be obtained from 5ml of whole blood.

4. For PCR analysis acceptable specimen types are**:** (place in tube with viral transport medium)
    a. Nasopharyngeal wash/aspirate (preferred)
    b. Oropharyngeal swab
    c. Nasopharyngeal swab

5. Packaging - double canister set-up:
    a. Specimen placed in leak proof primary container, then wrapped in absorbent material
    b. Primary container with absorbent material placed in rigid, screw top secondary container
    c. Secondary container placed in tertiary screw top container, labeled with appropriate "Biohazard" markings (This is the same packaging set-up as currently used for suspected TB cases that are submitted to Microbiology.)

6. Transport - Specimens for PCR should be shipped on ice and stored frozen (it is important to keep samples as cold as possible immediately after collection).

7. Notify the Division of Public Health Laboratory (DPHL) (302-653-2870) that samples are being shipped.

8. Specimens should be received by the DPHL between 8:30 am and 4:00pm Monday through Friday.

9. Send completed consent form(s) and DPHL Virology form with the specimen.

Rejection criteria:

a. Incomplete labeling/documentation.
b. Inappropriate specimens.
c. Specimens that are not shipped on ice.

Department of Health and Social Services
Division of Public Health
Disease Prevention and Control Section
Epidemiology Branch
302-744-4541 or 1-888-295-5156

SARS: Severe Acute Respiratory Syndrome

SARS is a respiratory (breathing) illness caused by a virus. The virus causes a mild to severe inflammation of the lungs (pneumonia).

How is SARS spread?
SARS spreads by close person-to-person contact (within 3 feet). Most people with SARS have cared for, or live with, another person with SARS. It is spread by direct contact with respiratory or other body secretions from a person who has SARS. It is also possible that SARS can be spread more broadly through the air or by other ways that are currently not known.

SARS can be spread when the infected person coughs or sneezes and another person inhales the moisture discharged from the infectious persons mouth (infectious droplets). Touching surfaces or objects that have been infected can also spread the virus. For example, if you touch the skin of an infected person or touch contaminated objects and then touch your eyes, nose, or mouth you may become infected. *Good hand washing is very helpful in limiting the spread of SARS.*

Unless you have been in contact with someone with SARS, or traveled to an area known to have SARS, you are probably not at risk.

If I were exposed to SARS, how long would it take for me to become sick?
You can develop symptoms of SARS up to 10 days after being exposed.

What are the symptoms of SARS?
SARS usually begins with a fever greater than 100.4°F. You can also have chills, headache, body aches, dry cough or difficulty breathing. A small percentage of patients may need to be admitted to the hospital. Some of those patients may need placed on a breathing machine.

Who is at risk for SARS?
Most of the cases in the United States have occurred among travelers returning to the United States from other parts of the world affected by SARS. There have been very few cases as a result of spread to close contacts such as family members and health care workers.

What is the medical treatment for patients with SARS?
Treatment currently consists of treating symptoms and any underlying infections.

What should I do if I have recently traveled to a country where cases of SARS have been reported?
You should monitor your own health for 10 days after you return. If you become ill with a fever of more than 100.4°F and have a cough or difficulty breathing, you should see your healthcare provider. Tell your healthcare provider about any recent travel to areas where cases of SARS have been reported and whether you were in contact with someone who had these symptoms.

Centers for Disease Control and Prevention (CDC) SARS website: http://www.cdc.gov/ncidod/sars/

Department of Health and Social Services
Division of Public Health
Disease Prevention and Control Section
Epidemiology Branch
302-744-4541 or 1-888-295-5156

SARS and Influenza (Flu) Vaccine

Vaccination against influenza (flu) works to protect you from infection by influenza viruses. The flu vaccine does **not** provide protection against the virus that causes Severe Acute Respiratory Syndrome (SARS) or viruses that cause illnesses similar to flu (called "influenza-like illness" or ILI).

Flu, SARS, and ILI

During the fall and winter flu season, many other infectious agents circulate and cause influenza-like illness. Influenza, influenza-like illness, and SARS have similar symptoms and may be difficult to distinguish initially. Flu, SARS, and influenza-like illness are characterized by fever, body aches, and headaches. Like flu, SARS spreads primarily from person to person.

SARS Symptoms and Diagnosis

SARS generally begins with a fever of at least 104°F (38°C). Other possible symptoms include headache, an overall feeling of discomfort, and body aches--much like flu or flu-like illness. Some people with SARS also experience mild respiratory symptoms. After a few days, SARS patients may develop a dry cough and have trouble breathing. In addition, most SARS patients have visited an area where SARS has been diagnosed or have been in contact with others who are known to be infected with SARS.

Centers for Disease Control and Prevention (CDC) does **not** recommend using influenza vaccination to reduce the risk of contracting SARS, ILI, or an illness that resembles SARS. If you are protected against the flu, you can still become sick with SARS or ILI, and your flu vaccination does not mean that SARS can either be assumed or ruled out as a diagnosis. Initial diagnosis must be made on the basis of your specific symptoms. Your doctor or healthcare professional must determine whether you do or don't have SARS by monitoring your condition and, if needed, testing specifically for SARS.

How Your Flu Vaccination Helps You

The flu vaccine is valuable as the best prevention against influenza and its severe complications, including pneumonia, hospitalization, and death. Complications from flu most often occur among those older than 65 years of age, those not yet 65 years of age who have certain medical conditions, and children younger than 2 years of age. Influenza vaccination is recommended or encouraged for these groups and their close contacts and for others including:

- all persons 50 years of age and over (people in this age group are likely to have at least one high-risk condition)
- healthcare workers
- household contacts of high-risk persons

The Health Alert Network (HAN)

A bioterrorist attack, like other health threats, would be detected first at the local level. Health departments throughout the nation must be prepared to detect and respond to those threats.

- The Health Alert Network (HAN) is a nationwide program to establish the communications, information, distance-learning, and organizational infrastructure for a new level of defense against health threats, including the possibility of bioterrorism.

- The HAN will link local health departments to one another and to other organizations critical for preparedness and response: community first-responders, hospital and private laboratories, state health departments, the Centers for Disease Control and Prevention (CDC), and other federal agencies.

- CDC is leading development of the HAN, in partnership with the National Association of County and City Health Officials (NACCHO), the Association of State and Territorial Health Officials (ASTHO), and other health organizations.

Facts about the HAN system

- High-speed, continuous, secure connection to the Internet, access to public health information, and front-line staff skilled in the use of electronic information and communications technology;

- Early warning systems, to alert state, local authorities, and the media about urgent health threats and about the necessary prevention and response actions.

- Enable local health officials nationwide to instantaneously access and share disease reports, response plans, and CDC diagnostic and treatment guidelines;

- Strengthen local health departments and their links for alerts to critical community health organizations, such as hospitals, laboratories, Emergency Medical Systems (EMS), and clinicians, which need to form a coordinated public health response to bioterrorism.

- Alert messages may be generated by CDC and/or the Delaware Division of Public Health. This network is the only way to get both sources of information.

- Enable local, state, and federal health authorities to communicate and coordinate rapidly and securely with each other and with law enforcement agencies.

There are three categories of Health Alert messages:
Health Alert: conveys the highest level of importance; warrants immediate action or attention.

Health Advisory: provides important information for a specific incident or situation; may not require immediate action.

Health Update: provides updated information regarding an incident or situation; unlikely to require immediate action.

DPH Use Only
Date Received:

Date Entered: DL:

Entered by:

Delaware HAN DATABASE Application

Department of Health and Social Services
Division of Public Health

ATTENTION: THE Delaware Health Alert Network (DHAN) IS A SECURE DATABASE, THE INFORMATION WILL NOT BE SHARED OR SOLD IN ANY WAY.

Please check the notification service you desire. Thank you
(*required field for this service)

☐ E-mail ☐ Fax Messaging ☐ Pager

Please complete the information below: **Please Print Legibly**

First Name*:_____ Last Name*_____ Suffix_____

Employer*_____

Street Address*_____

City*_____ State*_____Zip*_____

Phone: Office*_____ Home_____ Cell _____

Pager: _____ Fax _____

Email Primary*_____

Email secondary_____

Specialty* (i.e. emergency, infection control, pediatrics, emergency response,)
_____

Affiliation* (i.e. hospital, city, fire dept., agency, etc.)
_____

Comments:_____
_____